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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/714,356	11/16/2000	Helmut Horst Tews	00P9031US	4856

7590 03/11/2003  
Siemens Corporation  
Intellectual Property Department  
186 Wood Avenue South  
Iselin, NJ 08830

EXAMINER

CHEN, JACK S J

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 03/11/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/714,356

Applicant(s)  
Tews et al.

Examiner  
Jack Chen

Art Unit  
2813



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Nov 26, 2002
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above, claim(s) 3 and 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

Art Unit: 2813

### **DETAILED ACTION**

1. In response to the communications dated November 26, 2002, claims 1-9 are active in this application.

#### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities:

Regarding claim 1, lines 2-3, the phrase "the improvement" should change to --the process--.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 2, 4-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, step I), sub-step b, lines 3-4, the phrase "the isolation region" lacks antecedent basis.

Art Unit: 2813

Re claim 1, step I), sub-step c, the phrase "an isolation trench" is unclear (i.e., whether this is same the isolation trench as recited in sub-step b), if so, applicant should change to --said isolation trench--.

Re claim 1, step I), sub-step c, the phrase "capacitor trench" is unclear and indefinite since applicant has not defined this particular phrase and how it was formed.

Re claim 1, step I), sub-step d, the phrase, the phrase "the isolation trench" is unclear (which one? since there is one isolation trench is sub-step b and another is in sub-step c).

Re claim 1, step I), sub-step f, the phrase "forming a pad nitride strip" is unclear (i.e., where? or on what?).

Re claim 1, step II), the phrase "forming a sacrificial gate oxide layer in areas of the semiconductor substrate surface where the pad nitride has been stripped" is unclear and indefinite (first, it is unclear because whether this "the pad nitride" is the same as the "pad nitride strip" as recited in step I), sub-step f; second, it is unclear when and where the pad nitride was stripped from. It appears that the pad nitride must be removed prior to the step of forming the sacrificial gate oxide layer).

Re claim 1, step III), the phrase "affecting channel implants in selected areas using resist masks" is unclear and indefinite (where are the selected areas? The resist masks were formed on what?).

Re claim 1, step IV), the phrase "affecting a first low dose angled nitrogen implant ... all exposed oxide areas" is unclear and indefinite (first, it is unclear where the nitrogen was

Art Unit: 2813

implanted into; second, applicant has not defined “the gate area”, i.e., where and how it was formed; third, it is unclear where is the inner part of the gate area; fourth, applicant has not defined “the shadow area of the active area” and the “the remaining non-shadowed area”; fifth, where are the exposed oxide areas and how they were formed).

Re claim 1, step V), the phrase “affecting masking so that nitrogen ions ... the masked region” is unclear and indefinite (where is the masking region?).

Re claim 1, step VI), the phrase “affecting a second nitrogen ion ... in the remaining non-shadowed area” is unclear and indefinite (first, it is unclear whether the “a shadow area” is the same as the one recite in step IV); second, applicant has not defined “the gate area”, i.e., where and how it was formed; third, it is unclear where is the inner part of the gate area; fourth, applicant has not defined “the shadow area of the active area” and the “the remaining non-shadowed area”).

Re claim 2, the phrase “said shadow area” is unclear (i.e., which step in claim 1).

Regarding claims 4-5, the term “said oxidation” lack antecedent basis.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

Art Unit: 2813

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1, 2, 4-5 are rejected under 35 U.S.C. 102(e) as being anticipated by applicant's admitted prior art.

Due to the 112 problems, as best can be understood by the examiner are as following: applicant's admitted prior art disclosed the claimed limitation, see page 1 to 4.

7. Claims 1, 2, 4-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Huang et al., U.S./6,323,106 B1 or Kim, U.S./6,413,826 B2.

Due to the 112 problems, as best can be understood by the examiner are as following: Huang et al. disclosed the claimed limitation, see figs. 1-7, cols. 1-10; Kim also disclosed the claimed limitation, see fig. 1-19, cols. 1-14.

Art Unit: 2813

*Conclusion*


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Chen whose telephone number is (703) 308-5838. The examiner can normally be reached on Monday-Friday (alternate Monday off) from 8:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached on (703)308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

  
Jack Chen

March 5, 2003

  
JACK CHEN  
PATENT EXAMINER